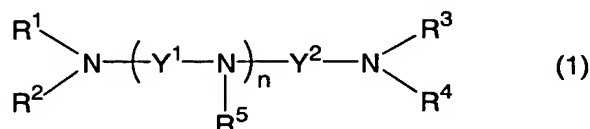


CLAIMS

1. A liquid cleaner for a semiconductor substrate on which metal wiring may be provided, comprising each component of a chelating agent or a salt thereof shown by the following general formula (1), an alkaline compound and pure water, wherein pH is 8 to 13.



(wherein, Y¹ and Y² are lower alkylene groups, n is an integer of 0 to 4, at least 4 of R¹ to R⁴ and n R⁵s are alkyl groups having phosphonic acid group(s) and the rest are alkyl groups).

2. The liquid cleaner according to claim 1, wherein, Y¹ and Y² in the chelating agent shown by the general formula (1) are alkylene groups having 1 to 4 carbon atoms and alkyl groups in alkyl groups which may have phosphonic acid group(s) relevant to R¹ to R⁴ and n R⁵s are alkyl groups having 1 to 4 carbon atoms.

3. The liquid cleaner according to claim 1, wherein the chelating agent or a salt thereof is at least one kind selected from the group consisting of

ethylenediaminetetraethylenephosphonic	acid,		
ethylenediaminetetraethylenephosphonic	acid	ammonium	salt,
ethylenediaminetetraethylenephosphonic	acid	potassium	salt,
ethylenediaminetetraethylenephosphonic	acid	sodium	salt,
ethylenediaminetetraethylenephosphonic	acid	lithium	salt,
ethylenediaminetetramethylenephosphonic	acid,		
ethylenediaminetetramethylenephosphonic	acid	ammonium	salt,
ethylenediaminetetramethylenephosphonic	acid	potassium	salt,
ethylenediaminetetramethylenephosphonic	acid	sodium	salt,
ethylenediaminetetramethylenephosphonic	acid	lithium	salt,
diethylenetriaminepentaethylenephosphonic	acid,		
diethylenetriaminepentamethylenephosphonic	acid,		
diethylenetriaminepentamethylenephosphonic	acid	ammonium	salt,
diethylenetriaminepentamethylenephosphonic	acid	potassium	salt,
diethylenetriaminepentamethylenephosphonic	acid	sodium	salt,

diethylenetriaminepentamethylenephosphonic	acid	lithium	salt,
triethylenetetraminehexaethylenephosphonic			acid,
triethylenetetraminehexamethylenephosphonic			acid,
triethylenetetraminehexamethylenephosphonic	acid	ammonium	salt,
triethylenetetraminehexamethylenephosphonic	acid	potassium	salt,
triethylenetetraminehexamethylenephosphonic	acid	sodium	salt,
triethylenetetraminehexamethylenephosphonic	acid	lithium	salt,
propanediaminetetraethylenephosphonic			acid,
propanediaminetetramethylenephosphonic			acid,
propanediaminetetramethylenephosphonic	acid	ammonium	salt,
propanediaminetetramethylenephosphonic	acid	potassium	salt,
propanediaminetetramethylenephosphonic	acid	sodium	salt and
propanediaminetetramethylenephosphonic acid			lithium salt.

4. The liquid cleaner according to claim 1, wherein the alkaline compound is at least one kind selected from the group consisting of hydroxides of alkaline metals, carbonate salts of alkaline metals, aqueous ammonia solution or salts thereof, piperazine or derivatives thereof and guanidine or salts thereof.

5. The liquid cleaner according to claim 1, further comprising a buffering agent.

6. The liquid cleaner according to claim 5, wherein the buffering agent is one selected from boric acid and a good's buffer.

7. A method for cleaning a semiconductor substrate, which comprises the semiconductor substrate, on which metal wiring may be provided, is cleaned with a liquid cleaner of claim 1.